Amendments to the Claims

Amendments to the Claims are shown based on Claims 1-14 of the corresponding issued U.S. Patent No. 6,300,439 ("US-439".)

1. (Three Times Amended) A process for polymerizing olefin(s) comprising combining said olefin(s) in the presence of a catalyst system comprising a Group 15 containing [bidentate or] tridentate ligated metal catalyst compound, wherein the process is conducted at a temperature from between 50° C. to 200° C., and wherein the catalyst compound is represented by the formula: [formulae:]

$$\begin{array}{c|c}
R^4 & R^6 \\
R^3 & R^7 & R^7 \\
\hline
\text{Or} & R^4 & R^6 \\
R^4 & R^6 & R^7 \\
\hline
R^3 & L' & M^n X_{n-2} \\
\hline
R^7 & R^7 & R^7
\end{array}$$

wherein M is metal;

each X is an aryl substituted alkyl leaving group;

y is 0 or 1;

Application No.: 10/777,563 Response dated: April 28, 2010

Reply to Office Action: February 4, 2010

n is the oxidation state of M;

m is the formal charge of Y, Z and L [or of Y, Z, and L'];

L is a Group 15 element;

[L' is a Group 15 element or Group 14 containing group;]

Y is a Group 15 element;

Z is a Group 15 element;

 R^1 and R^2 are independently a <u>linear, branched, or cyclic C_2 - C_{20} alkyl group; [C_1 to C_{20} hydrocarbon group, a heteroatom containing group having up to twenty carbon atoms, silicon, germanium, tin, lead, or phosphorus;]</u>

R³ is absent, a hydrocarbon group, hydrogen, a halogen, or a heteroatom containing group;

R⁴ and R⁵ are independently an alkyl group, an aryl group, a substituted aryl group, a cyclic alkyl group, a substituted cyclic alkyl group, a cyclic arylalkyl group, a substituted cyclic arylalkyl group or a multiple ring system;

R¹ and R² may be interconnected to each other, and/or R⁴ and R⁵ may be interconnected to each other; and

R⁶ and R⁷ are independently absent, hydrogen, an alkyl group, halogen, heteroatom or a hydrocarbyl group; [and

R* is absent, hydrogen, a Group 14 atom containing group, a halogen, or a heteroatom containing group]

wherein said Group 15 containing tridentate ligated metal catalyst compound is added to a polymerization reactor in one of a slurry, a solution, an emulsion, a dispersion or a suspension, and wherein said Group 15 containing tridentate ligated metal catalyst compound has an activity of at least 641 g polyethylene/mmol catalyst atm h.

Application No.: 10/777,563 Response dated: April 28, 2010

Reply to Office Action: February 4, 2010

2. (Once Amended) The process of claim 1 wherein R¹ and R² are <u>a C₂ to C₆ hydrocarbon radical</u> [selected from the group consisting of a C₁ to C₂₀ hydrocarbon group, a heteroatom containing group, silicon, germanium, tin, lead, and phosphorus].

- 3. (Cancelled)
- 4. (Original) The process of claim 1 wherein R⁴ and R⁵ are represented by the formula:

wherein R⁸ to R¹² are each independently hydrogen, a C₁ to C₄₀ alkyl group, a halide, a heteroatom, or a heteroatom containing group containing up to 40 carbon atoms, wherein any two R groups may form a cyclic group and/or a heterocyclic group, and wherein the cyclic groups may be aromatic.

- 5. (Once Amended) The process of claim 4 wherein R^8 to R^{12} [R^9 , R^{10} and R^{12}] are independently a methyl, ethyl, propyl or butyl group and X is a substituted aryl group having greater than 10 carbon atoms.
- 6. (Once Amended) The process of claim 4 wherein R^8 to R^{12} [R^9 , R^{10} and R^{12}] are methyl groups, and [R^8 and R^{11} are hydrogen and] X is [a] an alkyl substituted with an aryl group.
- 7. (Original) The process of claim 4 wherein L, Y, and Z are nitrogen, R¹ and R² are a hydrocarbon radical, R³ is hydrogen, and R⁶ and R⁷ are absent.
- 8. (Once Amended) The process of claim 1 wherein L and Z are independently nitrogen, [L' is a hydrocarbyl radical,] and R⁶ and R⁷ are absent.
- 9. (Cancelled)

Application No.: 10/777,563 Response dated: April 28, 2010

Reply to Office Action: February 4, 2010

- 10. (Original) The process of claim 1 wherein the process is a continuous gas phase process.
- 11. (Original) The process of claim 1 wherein the process is a continuous slurry phase process.
- 12. (Original) The process of claim 1 wherein the olefin(s) is ethylene or propylene.
- 13. (Original) The process of claim 1 wherein the olefins are ethylene and at least one other monomer having from 3 to 20 carbon atoms.
- 14. (Original) The process of claim 1 wherein the catalyst system further comprises an activator.